

REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

After entry of the foregoing amendments, Claims 1-19 remain pending in the present application. Claims 1, 6, 11, 16, 17, and 18 have been amended. Claim 19 is new. Support for the amendments and new Claim 19 can be found in the specification and claims, as originally filed. No new matter is added.

By way of summary, the Official Action presents the following issues: Claims 1-18 stand rejected under 35 U.S.C. § 103 as being unpatentable over Pearlstein (U.S. Patent No. 5,691,986) in view of Hiroshima et al. (U.S. Patent No. 5,801,781, hereinafter "Hiroshima").

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REJECTION UNDER 35 U.S.C. § 103

The Official Action has rejection Claims 1-18 as being unpatentable over Pearlstein in view of Hiroshima. The Official Action cites Pearlstein as disclosing all of the Applicants' claim limitations with the exception of storing timing information separated from a first multiplex stream for indicating a timing of an elementary stream therein relative to other elementary streams. The Official Action cites Hiroshima as teaching this more detailed aspect of the Applicants' and states that it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to arrive at the Applicants' claims. Applicant respectfully traverses the rejection.

Amended Claim 1, *inter alia*, a transcoder in

means for storing timing information received from the means for separating and indicating a time at which a second packet, containing a

second elementary stream forming the first multiplexed stream, appears in the first multiplexed stream relative to the first packet; and

means for multiplexing, based on the timing information stored in the storing means, the first packet generated by the packetizing means and the second packet containing the second elementary stream to generate the second multiplexed stream.

By way of background the satellite digital broadcasting systems, content is provided to users via a MPEG transport stream (TS). Within this TS, a multiplexed elementary streams corresponding to video, audio and other data streams. When the TS is to be recorded to a recording medium, a transcoding is required to adjust the bit rates of the elementary streams included in the TS. However, conventional bit rate adjusting circuitry as shown in Figure 1 of Applicants' specification, are ineffective as elementary streams within the TS, which do not conform to MPEG standards, cannot be re-multiplexed.¹

In light of at least the above deficiencies in the art, the present invention is, in part, provided. With at least this object in mind, a brief comparison of claimed invention, in view of the cited references, is believed to be in order.

Pearlstein describes a video processing system in which an insertion circuit (100) and/or (200) or inserting or removing data into an encoded data stream. The insertion circuit (200) includes a packet cluster selection circuit (201) cluster data reducer circuits (205) and (206), packet replacer circuit (207) delay buffer (212) and a packet stream merger circuit (214).²

In operation, the packet cluster selection circuit receives a transport multiplex for identifying packet clusters from one or more streams in the multiplex for data reduction processing. Cluster data reducers (205) and (206) are provided for corresponding elementary streams upon which data rate reduction is performed. Packet replacer (207) inserts data in

¹ Application at pages 1-3.

² Pearlstein at column 4, lines 43-50; Fig. 2.

locations corresponding to the reduced clusters, and delay buffer (212) provides temporal data corresponding to the time required by the cluster data reducer circuit.³ As noted in the Official Action, Pearlstein does not disclose or suggest Applicants' storage of timing information, as the timing information in Pearlstein relates to insertion point processing. Instead, the Official Action relies upon Hiroshima as describing this more detailed aspect of the Applicants' invention.

Hiroshima describes a system by which a picture stream of MPEG-1 is transcoded to MPEG-2. For example, as shown in Figure 16, a demultiplexer (30) is provided for separating elementary video and audio streams from MPEG-1 system stream. To this end, PES packetizer (32) is provided for extracting PES packets from the corresponding elementary streams. A presentation time stamp calculating unit (36) is provided to calculate a change in the output value of a presentation time stamp corresponding to the transmission rate of MPEG-2. In this way, the presentation time stamp calculating unit changes the calculation values as a presentation time stamp 262 shown in a PES packet (260).⁴

Conversely, an exemplary embodiment of the Applicants' invention, timing information received from a separating unit indicates a time at which a second packet (i.e., content data of an elementary stream) appears in the first multiplexed stream relative to a first packet of a different elementary stream. In this manner, after packetizing and conversion processing, a multiplexing unit utilizes this timing information to generate a second multiplexed stream. As can be appreciated, the presentation time stamp (PTS) discussion in Hiroshima has no relation with timing information corresponding to the organization of a multiplexed transport stream. Simply stated, the PTS time stamp of a MPEG signal relates to

³ Pearlstein at column 4, line 58 thru column 5, line 16.

⁴ Hiroshima at column 11, line 61 to column 12, line 22.

presentation timing necessary for reproduction. This timing is independent of timing relative to packet positioning in a multiplexed MPEG transport stream.⁵

Accordingly, Applicants respectfully submit that amended Claim 1 and any claim depending therefrom is patentably distinguished over the cited references. Likewise, as independent Claims 6, 11, 16, 17 and 18 recite substantially similar limitations to that discussed above. Applicants respectfully submit that these claims as well as any claims depending therefrom are likewise allowable over the cited references. As such, Applicant respectfully requests that the rejection of Claims 1-18 under 35 U.S.C. § 103 be withdrawn.

NEW CLAIM

As Claim 19 recites substantially similar limitations to those discussed above, albeit in a format which does not invoke 35 U.S.C. § 112, sixth paragraph, Applicant submits that this claim is likewise allowable over the cited references.

CONCLUSION

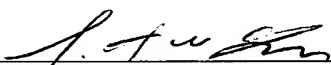
Consequently, in view of the foregoing amendment and remarks, it is respectfully submitted that the present application, including Claims 1-19, is patentably distinguished over the prior art, is in condition for allowance, and such action is respectfully requested at an early date.

Respectfully submitted,
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⁵ For example, see Application at page 10, second paragraph.